BFM

MISSION OVERVIEW

DEBRIEF GUIDE

ORM

- **Operational Requirements / Limitations**
  - **Crew Rest / Crew Day / Work Week**
  - **R&I**
  - **IP Currency (SOP)**
  - **Warm Up Eligibility**
  - **Previous Flight Incomplete? Determine Graded Items**
  - **On-Wing Required / MCG Notes?**
- **Human Factors**
  - **Life Stressors / External Factors / Personal Problems**
  - **Medical Status (Rest / Nourishment / Hydration)**
- **Hazards and Controls**
  - **Routine**
  - **Weather**
    - **Current Observations and Forecasts**
    - **Crosswinds**
    - **Fuel Considerations**
  - **Mission Specific**

TTO

- **Who will call a TTO?**
- **What situations will the TTO be called?**
  - **Safety**
  - **Confusion / Misunderstanding**
- **IP Responsibilities**
  - **Recognize need for TTO**
  - **Explanation / Instruction as necessary**
  - **Documentation on ATF**
- **When and how will training resume?**

ADMIN / TAC ADMIN REVIEW

- **Weather / NOTAMS / TFR / BASH**
  - **Launch / Enroute / Recovery / Divert**
  - **Environmental Data**
- **Questions of the Day**
  - **NATOPS**
  - **EP**
  - **SOP**
- **TIMS Resume Review**
- **Admin**
- **Tac Admin**
  - **TACF**

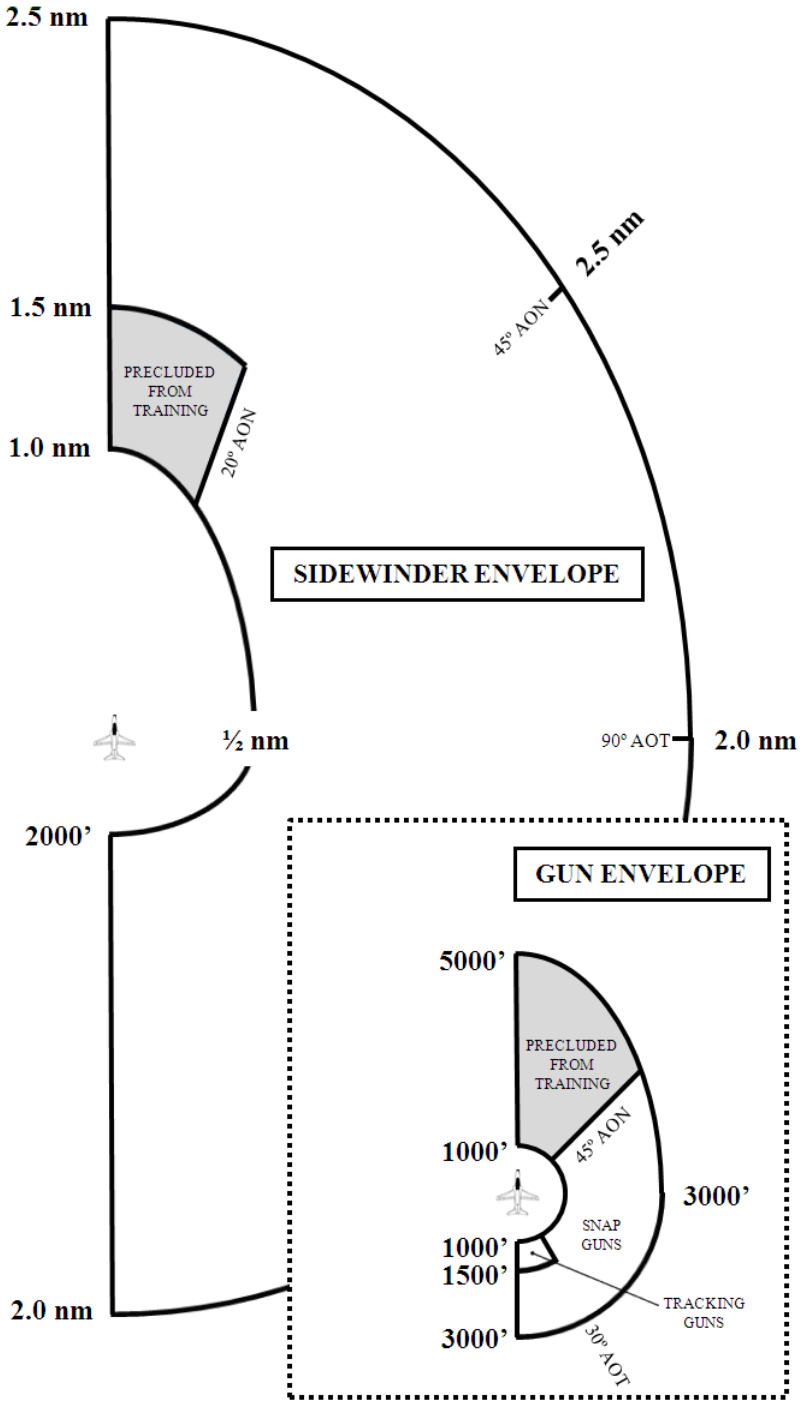
T-45 PERFORMANCE AND LIMITATIONS

- **EM Diagram Review**

- **T-45 Limitations**
  - **Engine Limitations**
    - **No abrupt aft stick with engine other than idle**
    - **Idle if <85 KIAS and >15k’**
  - **Lateral Stick Limitations**
    - **<8 units AOA avoid large lateral stick inputs**
    - **<3 units AOA lateral stick inputs prohibited**

LAR / WEZ

Employing weapons inside the shaded areas labeled “PRECLUDED FROM TRAINING” is a Training Rule violation and will treated as such.



MISSION

OBFM

DBFM

HA BFM

CONDUCT BRIEF

OBFM

OBFM Goals

1) Maintain the offensive position
2) Employ follow-on weapons
3) Transition to HA BFM if neutralized
   (HA BFM not trained to until HA BFM Block)

SSD

- **Why?**
  - **To practice employing the gun via a snap shot (may be only shot during a fight)**
- **PADS**
  - **Abeam / D+5k / 1.0nm / 300 KIAS**
  - **Be on PADS at each apex**
    - **“Reset” if not there**
- **4x4m**
- **Shooter turns in first**
- **“Shackle” weave following the flight path cross**

SSD

- **Solve the BIG 3**
  - **POM / Range / Lead**
  - **Scan / Timing / Mechanics / Comm**

- **Maneuvering Runs**
  - **Aggressively re-solve POM (maintain sight)**
  - **Aim using area in between airspeed/altitude boxes (psuedo gun cross)**
    - **Two plane lengths of overlead**

- **Safety / TR**

FLATS

- **Why?**
  - **Partial task trainer for flat scissors maneuvering (aircraft will stay well inside each other's bubble)**

- **PADS**
  - **Abeam / D+5k / 0.5nm / 200 KIAS**
  - **Maintain till "Fight's On"**
  - **At "Fight's On" longitudinal pull up. Turn in with the pass called.**

FLATS

- **Flats NOT a 1c Fight**
  - **Well inside each other's bubble (TA/Canopy motion cues)**
  - **Radius not the major factor**
    - **Airspeed and AOA win the fight (Down Range Travel)**
- **BAW**
  - **Hi AOA and Slow Speed**
    - **Target 130 KIAS at 23-24 AOA**
- **In-phase vs. out-of-phase**
  - **Nose to tail sep?**
- **Reversal timing**
- **Shots**
- **Safety / TR**

ROLLER

- **Why?**
  - **Partial task trainer to rolling scissors maneuvering**
- **PADS**
  - **Abeam / D+6k / 0.5nm / 200 KIAS**
  - **“Check L/R 45” after “speed and angels”**
  - **Maintain till “Bandit’s Going Up”**
- **Roller occurs inside each other’s bubble (TA/canopy motion cues)**
  - **Goal is to create exclusive use turning room to gain angles / weapons separation**

ROLLER

- **Four Step Process**
  1) **Wings level compromise pull up (16-17 AOA)**
  2) **Max perform up and across the horizon (keep your nose high attitude) till horizontal overshoot**
     1) **Target 35 to 45 degrees nose high**
  3) **Pirouette (idle, unload, roll, pull)**
     1) **Lift Vector Placement (slightly aft typically)**
     2) **Target 50-60 degrees nose low**
  4) **Lift limit pull to step one keeping LV slightly aft**
     1) **Target 200 to 230 KIAS at the bottom**
- **Assess**
  - **Winning**
    - **Bottom of your Roller is top of Bandit's (~Co-alt)**
    - **Bandit's nose is down when you pirouette**
  - **Shots / other LV placement**
  - **Transitions (Deck / One-circle)**

PERCH BFM

- **Why?**
  - **Train to OBFM transition, weapons employment and maintaining your offensive position**

- **PADS 6k (First)**
  - **Abeam / D+6k / 1.5nm / 350 kts**
    - **From 300 kts D+6k, level accel to 350 kts**
    - **Maintain till “Fight’s On”**
      - **+/- 10 degrees from 40 degrees AOT at Fight’s On**
- **PADS 9k (Second)**
  - **Abeam / D+6k / 2.0nm / 400 kts**
    - **7 deg unload from PADS + 2.5k**
    - **Maintain till “Fight’s On”**
      - **+/- 10 degrees from 40 degrees AOT at Fight’s On**

PERCH BFM

- **Check 50 L/R into defender**
  - **Defender Reverses at heading to put offender at 40 deg AOT**
  - **Offender calls “reverse” at canopy bow if defender has not reversed yet**
- **Countdown ranges**
  - **“Hammer 12 in from X.X…”**
  - **“Fox-2” or “Fight’s On” at 1.0nm 6k / 1.5nm 9k**

PERCH C’s and D’s

- **Bubble**
  - **Cues**
  - **Significance**
- **Post**
- **MATC**
- **AW**
- **CZ**

9K SET

- **Fox-2 then LAG**
- **TA change to LOS rates**
  - **Lift vector on and pull to stabilize**
    - **Assess AWE**
      - **Early (forward canopy motion) / Late (immediate aft canopy motion) / Nailed (initially stable canopy position)**
  - **Capture at aft motion or to not bleed below 300 to 330**
  - **MATC / 2nd Bubble Entry**
    - **Forward Motion = Max perform for a shot**
    - **Shot and LAG**
  - **Redefinition Follow**
    - **Get on same POM**

9K SET

- **Deck Transition**
  - **10% Rule**
- **Look for canopy motion cues for capture or pull**
  - **Don’t bleed below 300 to 330 until a shot opportunity**
  - **Shot and LAG to CZ**

- **Bandit Reverses?**

6K SET CAVEATS

- **More offensive but higher tempo**

- **Less time to get to AWE**
- **Fewer angles lost**
- **Little to no flight path overshoot**
  - **No 2nd bubble entry**
- **Little to no MATC**

- **Watch closure on the deck**

OBFM

QUESTIONS

CONDUCT BRIEF

BACK TO TOP OF OBFM

TRAINING SQUADRON SEVEN

TRARON NINE

DBFM

DBFM Goals

1) Defeat initial weapons employment
2) Maneuver to deny follow-on WEZ
3) Neutralize
4) Transition to HA BFM if neutralized
   (HA BFM not trained to until HA BFM Block)

DBFM

- **Defensive Axioms**
  1) **Survive**
     1) **Deny sensor nose**
     2) **Defeat Shots**
  2) **Attacker moving forward on canopy = Keep pulling**
  3) **TA decreasing = Increase pull to hold attacker's nose off**
  4) **If unable to perform steps 2 &3 Redefine**

Bug Criteria / Mechanics

- **Bug Criteria**
  - **150-180 degree out pass**
  - **500 foot pass**

- **Bug Mechanics**
  1) **MRT**
  2) **40-50 degrees nose low (altitude dependent)**
  3) **Unload**
  4) **Keep sight**
  5) **Check turn – 20-30 degrees away (once)**
  6) **Assess bug**

SSD

- **Why?**
  - **To practice defeating snap gun shots and the associated sight pictures**
- **PADS**
  - **Abeam / D+5k / 1.0nm / 300 KIAS**
  - **Be on PADS at each apex**
    - **“Reset” if not there**
- **4x4m**
- **Shooter turns in first**
- **“Shackle” weave following the flight path cross**

SSD

- **Cooperative maneuver**
- **Hold shooter at 10/2 o’clock position**

- **Non-maneuvering Runs**
  - **Assess nose and compare**
  - **Reverse when you lose sight**

- **Maneuvering Runs**
  - **Get skinny and defeat POM**
  - **Timing**

- **Safety / TR**

FLATS

- **Why?**
  - **Partial task trainer for flat scissors maneuvering (aircraft will stay well inside each other's bubble)**

- **PADS**
  - **Abeam / D+5k / 0.5nm / 200 KIAS**
  - **Maintain till "Fight's On"**
  - **At "Fight's On" longitudinal pull up. Turn in with the pass called.**

FLATS

- **Flats NOT a 1c Fight**
  - **Well inside each other's bubble (TA/Canopy motion cues)**
  - **Radius not the major factor**
    - **Airspeed and AOA win the fight (Down Range Travel)**
- **BAW**
  - **Hi AOA and Slow Speed**
    - **Target 130 KIAS at 23-24 AOA**
- **In-phase vs. out-of-phase**
  - **Nose to tail sep?**
  - **Deny shots**
- **Reversal timing**
- **Safety / TR**

ROLLER

- **Why?**
  - **Partial task trainer to rolling scissors maneuvering**
- **PADS**
  - **Abeam / D+6k / 0.5nm / 200 KIAS**
  - **“Check L/R 45” after “speed and angels”**
  - **Maintain till “Bandit’s Going Up” Call**
- **Roller occurs inside each other’s bubble (TA/canopy motion cues)**
  - **Goal is to create exclusive use turning room to gain angles / weapons separation**

ROLLER

- **Four Step Process**
  1) **Wings level compromise pull up (16-17 AOA)**
  2) **Max perform up and across the horizon (keep your nose high attitude) till horizontal overshoot**
     1) **Target 35 to 45 degrees nose high**
  3) **Pirouette (idle, unload, roll, pull)**
     1) **Lift Vector Placement (slightly aft typically)**
     2) **Target 50-60 degrees nose low**
  4) **Lift limit pull to step one keeping LV slightly aft**
     1) **Target 200 to 230 KIAS at the bottom**

- **Assess**
  - **Losing**
    - **Top of your Roller is bottom of Bandit's (~Co-alt)**
    - **Bandit's nose is up when you pirouette**
  - **Transitions (Two-circle to Deck / One-circle)**

PERCH BFM

- **Why?**
  - **Train to DBFM transition, DBFM goals and Axioms**

- **PADS 6k (First)**
  - **Abeam / D+6k / 1.5nm / 350 kts**
    - **300 kts level accel from D+6k**
    - **Maintain till “Fight’s On”**
      - **+/- 10 degrees from 40 degrees AOT at Fight’s On**
- **PADS 9k (Second)**
  - **Abeam / D+6k / 2.0nm / 400 kts**
    - **7 deg unload from PADS + 2.5k**
    - **Maintain till “Fight’s On”**
      - **+/- 10 degrees from 40 degrees AOT at Fight’s On**

PERCH BFM

- **Check 50 L/R into defender**
  - **Defender Reverses at heading to put offender at 40 deg AOT**
  - **Offender calls “reverse” at canopy bow if defender has not reversed yet**
- **Countdown ranges**
  - **“Hammer 11 in from X.X…”**
  - **“Fox-2” or “Fight’s On” at 1.0nm 6k / 1.5nm 9k**

PERCH C’s and D’s

- **Bubble**
  - **Cues**
  - **Significance**
- **MATC**
- **Post**
- **AW**
- **CZ**

Reversal Criteria

- **Types of overshoots**

- **Reversal Criteria**
  1) **ICFPOS with > 60 degrees TA**
  2) **High LOS Rates**
  3) **Visualize reversing inside bandit's turn radius**

- **Aggressive reversal placing lift vector slightly above the bandit**

9K SET

- **Max perform level break turn**
  - **Technique: Keep bandit same distance above horizon**

- **Assess AWE**
  - **Early – decreasing TA = keep pulling**
    - **Impending ICFPOS? Defeat weapons**
  - **Late – increasing TA**
    - **MATC**
    - **Defensive rate war?**
    - **HA BFM?**
  - **Nailed – stable TA**

9K SET

- **Forward motion stops (NLT aft motion on canopy) = capture airspeed/altitude**

- **Inside**
  - **Airspeed / Altitude**

- **Assess**
  - **Where to look?**
  - **Forward motion / TA decreasing**
  - **Redefinition Criteria / Timing**

9K SET

- **Redefinition**
  - **Radius Defense (2C redefinition)**
  - **Ditch? [Only if alt. available AND bandit well inside your bubble (1C redef, which results in 2Cflow)]**
  - **Deck Transitions: PDT vs. ERDT (low vs. high fuselage misalignment)**
    - **10% Rule**
  - **Mechanics**
    - **Maintain Sight**

- **On the deck**
  - **Apply cues from altitude to on deck maneuvering**

6K SET CAVEATS

- More defensive and higher tempo

- Fewer angles gained back
- Redefinition comes more quickly
- Little to no flight path overshoot
  - No 2nd bubble entry
- Little to no MATC

DBFM

QUESTIONS

CONDUCT BRIEF

BACK TO TOP OF DBFM

TRAINING SQUADRON SEVEN

TRARON NINE

HA BFM

- **HA BFM Goals**
  1) **Deny weapons employment**
  2) **Achieve first weapons employment**
  3) **Gain positional advantage**
  4) **Employ follow-on shots**
  5) **Transition to OBFM / DBFM**
  6) **Separate or Bug prior to becoming defensive**

HA BFM

- **How?**
  - **LV Placement**
    - **Start with Pure**
    - **Lead to collapse range (get inside bandit's bubble)**
    - **Lag to create / preserve turning room**
  - **Airspeed Excursions**
    - **Take or Create / Deny turning room**
    - **Take / Deny a shot**
  - **Control Merges**
    - **Two-circle game plan (try to force a wide merge)**
    - **One-circle (try to stack low / high and force one-circle flow)**

HA BFM

- **Recommended High Aspect Merge Airspeeds**
  - **Nose High: 350 – 420 KIAS**
  - **Nose Low: 270 – 350 KIAS**
  - **Level: 370 – 410 KIAS**

HA BFM

- **Merge Assessments**
  - **Altitude**
  - **Energy (both aircraft)**
  - **Geometry (hi, low, angles)**
  - **Take out the turning room**
  - **Set the flow (1c or 2c)**

- **Think 1 merge ahead**

HA BFM

- **Unique Merges**
  - **Low to High**
    - **Slow Speed Vertical Reversal**
    - **One-circle flow post-merge desired**
  - **High to Low**
    - **Two-circle flow post-merge desired**
  - **Slow Speed Merge**
    - **Delay any nose-low maneuver till bandit outside your bubble (about 3 seconds post-merge)**

- **Nose High Counter**
  - **Less than minimum vertical airspeed and bandit goes up or has altitude advantage**

HA BFM SETS

- **Snap Shot Drill (2 x 2m)**
  - **SNA choice to be target or shooter**

- **Butterfly Set**
  - **PADS**
    - **Abeam / D+2k or D+6k / 1.0nm / 350 kts**
    - **300 kts level accel from D+2k**
    - **“Fight’s On” at 3/9 line passage**
      - **Strive for neutral / 500’ / wings level / co-alt merge**
  - **Safety / TR**
    - **Student calls pass with “turning in” call (right-to-right OR left-to-left)**
      - **Example – “Slayer 12 turning in, right to right”**
    - **Lead will acknowledge and each aircraft will make the called pass happen**
    - **If lost sight at the turn in – call “blind”, if both aircraft are blind lead will climb 1k’ and wing will descend 1k’ with a KIO call from lead.**

HA BFM SETS

- **Abeam Set**
  - **PADS**
    - **Abeam / D+2 or D+6k / 1.0nm or 1.5nm / 300 kts or 350 kts**
    - **300 kts level accel from D+6k**
    - **“3 (select MRT)…2…1…Fight’s On”**
  - **Safety / TR**
    - **Student calls pass with “Fight’s On” call (right-to-right, left-to-left, high or low)**
      - **Example – “Slayer 12 fight’s on, high”**
    - **Lead will acknowledge and each aircraft will make the called pass happen**
    - **Aircraft will not turn in until the pass is called**
    - **Fighting at the “Fight’s On” is obvious however safety dictates a slightly slower tempo**

HA BFM

- **The following canned sets will be performed at least once on each HA BFM event.**

One-circle Neutral Flow Canned Set Initiated from Butterfly D+2k set

- **Why?**
  - **The main focus is: To familiarize the student with neutral one-circle flow**

- **Training Rules Review**

- **Capture 370+ KIAS for merge**
- **Both aircraft check turn across each other's tail then go pure nose high**

- **Subsequent merges**
  - **Earth stabilized pass**
  - **Roll upright when canopy bow reaches the horizon**
  - **In plane One-Circle fight (140 to 180 airspeed band)**
    - **Differences from Flat Scissors Set**
    - ***Slow speed unique merges!***
  - **Bandit turns across the fighter's tail**
  - **Fighter check turns across the bandit's tail then reverses to "set the flow" one-circle**
  - **At least four total merges required**

- **Fight as desired afterwards or KIO**
  - **Examples – nose low or two-circle flow transition**

Two-circle Neutral Flow Canned Set Initiated from Abeam set

- **Why?**
  - **The main focus is: To familiarize the student with neutral two-circle flow and how to “cut across the circle”**
  - **Added benefit: Demonstrate un-countered out-of-plane maneuvering**

- **Training Rules Review**

- **First merge initial move (level reactionary game plan)**
  - **Both aircraft turn across each other’s tail and set the VV level to 5 degrees above the horizon (trading airspeed above rate band into altitude)**
  - **Cross circle (plan form of opponent or opponent on LV) overbank and adjust to arrive at a merge on the deck (going through about 40 to 50 degrees nose low)**
  - **Aircraft will have approximately 380 KIAS at the next merge (merge at about 12k’)**
- **At next merge**
  - **Bandit remains level (capture to compromise pull)**
    - **Un-countered out-of-plane maneuver**
  - **Fighter pure nose high**
    - **At pure nose high place lift vector in lead to collapse range (5-6 plane lengths)**
    - **Then pure for the shot**
    - **Then lag to gain / maintain offensive advantage**

- **KIO following offensive advantage of fighter**

HA BFM

- **Subsequent Sets**

- **Game Plan Development**
  - **Why nose-high?**
    - **Sun?**
    - **First Shot?**
  - **Why nose-low?**
    - **Bandit looking down into haze / clutter**
    - **Setup steep low to high**
  - **Why level?**
    - **Reactionary game plan**
      - **Good when unsure of what to do**
      - **Must be able to quickly recognize and adapt to avoid losing angles (un-countered out-of-plane maneuvering)**

HA BFM

QUESTIONS

CONDUCT BRIEF

BACK TO TOP OF HA BFM

TRAINING SQUADRON SEVEN

TRARON NINE

CONDUCT

ADMIN

- **ORM**
  - **Mission Specific**
- **TTO**
- **Weather / NOTAMS / TFR / BASH**
  - **Launch / Enroute / Recovery / Divert**
  - **Environmental Data**

Training Rules - Full

Administrative

- *Departure/spin. Compressor Stall/EGT/RPM.
- Scheduled face to face brief.
- ACM Authorized by cognizant commander.
- Designated ACM area.
- *Currency: All In Flight Have Flown
- < 750 hrs FPT in type/class:
  - Once within previous 6 days
  - Twice within previous 14 days (1 dynamic in T/M).
- > or = 750 hrs FPT in type/class:
  - Once within previous 14 days
  - Twice within previous 30 days (1 dynamic in T/M).

Weather, Decks and Blocks

- Daylight (from 30 minutes past sunrise till 30 minutes prior to sunset), VMC, 5 miles visibility and a defined horizon.
- Cloud separation – 2,000 feet vertically and 1 mile horizontally.
- No maneuvers through cloud layers.
- Decks (brief MSL altitudes for working area)
- Hard Deck:
  - Minimum 10,000 feet AGL (or 5,000 feet above an undercast).
    - The undercast shall be no higher than 7,000 feet AGL solo/8,000 feet AGL dual.
- Soft Deck:
  - Minimum 5,000 feet above the hard deck.
  - No slow speed or high AOA maneuvering below the soft deck (less than 120 KIAS or more than 24 units sustained for more than 3 seconds).

Blocks:

- Established in assigned block by 10 nm without required SA on opposing force.
- Comm Requirements:
- Transmit / Receive / Monitor Guard / ICS (multi place aircraft).
- Configuration changes other than speed brakes are prohibited.

Pre-commencement of ACM

- Perform G-warm maneuver
- Altimeter warnings set
- Element lead final coordination:
  - Confirm weather.
  - Announce local altimeter setting and any decks/blocks changes.

Commencement of ACM

- Collision Avoidance:
- 500 feet separation between all aircraft at all times.
- Always assume the other aircraft does not see you.
- Head-on pass:
  - Maintain the established trend, if no trend established, give way to the right to create a left-to-left pass.
  - Broadcast your own intentions.
- Converging flight paths:
  - Nose-high goes high.
  - Nose-low has collision avoidance responsibility.
  - Broadcast your own intentions.
- Never intentionally maneuver to lose sight (no blind lead turns).
- Up sun aircraft has the responsibility for collision avoidance. If down sun aircraft lost sight, transmit “call sign blind sun” and turn away from predicted collision bearing. If up-sun aircraft still has sight of the down-sun aircraft and safe separation can be maintained, the up-sun aircraft shall immediately broadcast “call sign continue”, otherwise knock it off.
- If lost sight, transmit “call sign blind” and turn away from predicted collision bearing. Other aircraft shall transmit “call sign continue” or “call sign blind *altitude*”. If two aircraft have lost sight the first aircraft to transmit blind shall deconflict via altitude. Knock it off anytime deconfliction is not assured.
- BFM Events Only: Knock it off if both aircraft have lost sight.
  - SEM Events Only: If lost sight of the bandit use the term “no joy” vice “blind”. Without a tally/visual on all fighters/bandits, aircraft shall conduct belly checks at a minimum of every 90 degrees of turn.
- Call “ballistic” (for slow speed reduced maneuverability < 100 KIAS).
  - No head-on missile attacks inside 9,000 feet (1.5nm) 20 degrees of the nose.
  - No forward quarter gun attacks (45 degrees of the nose).
- Break off all gun attacks at 1,000 feet.
- Terrain Avoidance:
- No guns defense below the soft deck (aggressive nose-low, > 45° out-of-plane).
- Offensive aircraft will monitor the defensive aircraft’s altitude, attitude, and airspeed and will break off the attack prior to pushing the defensive aircraft through the hard deck.

Termination of ACM

- ACM shall cease when:
- Any training rule is violated.
- “Knock it off” is called by anyone, all players echo, or an aircraft is rocking its wings.
  - “Knock it off” for:
    - Interloper.
    - Departure/spin.
    - G-LOC (mandatory RTB)
    - Min alt broken.
    - Nordo/ICS Failure.
    - Overstress
    - Bingo fuel.
    - Inadvertent IFR.
    - Loss of SA / any unsafe condition.
    - 85 KIAS and decelerating.
    - Training objectives attained.
    - In a BFM engagement, both a/c lose sight approaching area boundary.

Post Termination of ACM

- Aircraft shall maneuver to maintain safety of flight and be aware of the high midair collision potential following the “knock it off” call.

Training Rules - Short

Administrative

- *Departure/spin. Compressor Stall/EGT/RPM.
- Face to face brief.
- *Currency: All in flight have flown: 1 in 6, 2 in 14 (<750 hrs) or 1 in 14, 2 in 30 (>750 hrs).
- All aircraft must have operable UHF/ICS (multi-place) and monitor Guard

Weather, Decks and Blocks

- Conducted in an authorized area from 30 min past sunrise to 30 min prior to sunset
- Weather: VMC, 5 miles visibility and a defined horizon.
- Maintain 2,000 feet vertically and 1 mile horizontally from all clouds.
- *Decks
  - Hard Deck: 10,000 ft AGL minimum or 5,000 ft above an undercast, provided the highest layer is 7,000 ft AGL solo / 8,000 ft AGL dual.:
  - Soft Deck: 5,000 ft above the hard deck.
    - No slow speed or high AOA maneuvering below the soft deck (less than 120 KIAS or more than 24 units sustained for more than 3 seconds).
- Configuration changes other than speed brakes are prohibited.

Pre-commencement of ACM

- Execute G-warm

Commencement of ACM

- Maintain 500 ft separation between all aircraft at all times.
- Always assume the other aircraft does not see you.
- For head-on passes, maintain the established trend. When no trend exists, give way to the right for a left-to-left pass. Broadcast your own intentions.
- For converging flight paths, nose-high goes high. Nose low has collision avoidance responsibility. Broadcast your own intentions.
- Never intentionally maneuver to lose sight (no blind lead turns).
- If lose sight, transmit “c/s blind” or “c/s blind, sun” and turn away from predicted collision bearing. Other aircraft shall respond with “c/s continue” or “c/s blind, altitude.” Up-sun aircraft is responsible for collision avoidance. Knock-it-off any time deconfliction is not assured.
- SEM Events: Without tally/visual, aircraft shall conduct belly checks every 90 degrees of turn.
- Call “ballistic” for slow speed reduced maneuverability <100 KIAS
- No head-on missile attacks inside 9,000 ft (1.5nm).
- No forward quarter gun attacks. Break off all gun attacks at 1,000 ft.
- Terrain Avoidance: Offensive (high) aircraft will monitor the defensive (low) aircraft’s altitude, attitude, and airspeed and will break off the attack prior to pushing the defensive aircraft through the hard deck.

Termination of ACM

- ACM shall cease when “Knock it off” is called or an aircraft is rocking its wings.
  - “Knock it off” for:
    - Interloper.
    - Departure / spin.
    - G-LOC (mandatory RTB).
    - Min alt Broken.
    - Nordo / ICS Failure.
    - Overstress.
    - Inadvertent IFR.
    - Loss of SA / any unsafe condition.
    - 85 KIAS and decelerating.
    - Training objectives attained.
    - In a BFM engagement, both a/c lose sight approaching area boundary.
- Be aware of the high midair collision potential following a “knock it-off” call.

ADMIN

Kneeboard Card Review

- **General**
  - Working Area
  - ATC Clearance
- **Communication Plan**
  - Presets / Manual Freqs / Controlling Agencies
  - Initial Check-in / In-flight Check-Ins / Post-landing
- **Navigation**
  - NAVAIDS / A/A TCN / Waypoint Plan
  - RADALT Procedures
- **Performance Data**
  - RPM (Start / MRT) / Line Airspeed / Takeoff (Rotation / NWLO) / Abort

ADMIN

- **Ground Operations**
  - **Preflight**
  - **Start**
  - **Marshal / Taxi**
- **Take-off / Departure / Route of Flight**
  - **Type take-off / Departure Procedures**
  - **Formation Rendezvous**
  - **Route of Flight**
- **Recovery**
  - **Fuel Management / Joker / Bingo**
  - **Final KIO / Final Rendezvous**
  - **Type Recovery / Route / Formation**
- **Debrief**
  - **Products (Tape set to the SSD)**
  - **E-Brief Open to Debrief Slides**

TAC ADMIN

- A/A / A/G Setup
- Environmentals
  - Sun / Wind / Decks (Altimeter)
- G-Warm / Inverted Check
- FENCE In
- Ops and G Checks
- KIO (low / high SA)
  - Fly to PADS
- Final KIO / FENCE Out
- BD Checks

MISSION

- **Block requirements**
  - **PA?**
  - **SNA Lead Home?**
  - **Other?**

- **Event Flow**
  - **Demo Items**
  - **Introduce Items**
  - **Practice Items**

CONTINGENCIES

- AIRCRAFT FALLOUT
- CLEAR ENGINE PROCEDURE
- ABORTED TAKEOFF
- RWY DEP / LOSS OF DIRECTIONAL CONTROL
- SYSTEM FAILURES/ EPs / CRM
- BIRD STRIKE/ MIDAIR
- RADIO/ ICS FAILURE
- LOSS OF NAVAIDS / LOST PLANE
- INADVERTENT IMC / LOST SIGHT / LCLS
- DISORIENTATION / VERTIGO
- HYPOXIA
- EJECTION (HIGH / LOW / GROUND)
- SAR / ON SCENE COMMANDER
- DIVERT(S) / BINGO FUEL TO DIVERT

QUESTIONS

O-D-HA BFM

TRAINING SQUADRON SEVEN

TRARON NINE

DEBRIEF

- **Questions from the Coordination / Event Brief**
- **Admin / Tac Admin**
  - **Gripes / ASAP / Other**
- **Safety of Flight / Training Rule Violations**

- **Alibis**
- **Environmentals**

- **Mission**

DEBRIEF

- **Snap Shot Drill**
  - **PADS at “speed and angels” and at each apex**
  - **Non-maneuvering sets**
    - **POM / Range / Lead**
    - **Assessments vs. Reality**
  - **Maneuvering sets**
    - **Aggressively resolving – POM / Range / Lead**
    - **Assessments vs. Reality**

DEBRIEF

- **Flats**
  - **PADS**
  - **Entry maneuver**
  - **AOA / airspeed control**
  - **Lift vector placement**
  - **Reversal timing**
  - **Recognition of offensive / defensive**
    - **LAR / WEZ recognition (validate shots)**
    - **Defense maneuvering (i.e guns D)**
    - **Fight redefinition**

DEBRIEF

- **Roller**
  - **PADS**
  - **Lift vector placement**
  - **AOA / airspeed control**
  - **Recognition of offensive / defensive**
    - **LAR / WEZ recognition (validate shots)**
    - **Fight redefinition**
  - **Flight path projection**

DEBRIEF

- **Offensive Perch Set**
  - **PADS / Fight set up**
  - **AW recognition / OBT timing**
  - **Offensive break turn mechanics**
    - **Lift vector placement**
    - **Pull**
  - **Energy management**
    - **Energy excursions only when needed**
  - **Fight redefinition recognition / follow**
  - **Deck transition**
  - **LAR / Shot opportunity recognition**
  - **Validate shots**

DEBRIEF

- **Defensive Perch Set**
  - **PADS / Fight set up**
  - **Defensive break turn mechanics**
    - **Lift vector placement**
      - **Velocity Vector level 3 degrees below horizon maximum**
    - **Pull**
  - **AWE timing recognition**
  - **Sensor nose recognition**
  - **Fight redefinition selection / mechanics**
    - **Ditch**
    - **Positional Deck Transition**
    - **Energy Rate Deck Transition**
  - **Deck awareness**
  - **Energy management**
  - **Reversal criteria recognition**

DEBRIEF

- **HA BFM**
  - **PADS / Fight Setup**
  - **Aggressiveness**
  - **Out-of-plane maneuvering**
    - **Lift Vector placement**
    - **Energy management / Excursions**
  - **Controlling merges**
  - **Merge assessments**
  - **Game plan execution**
  - **Recognition of offensive / defensive position**
  - **LAR / WEZ recognition (validate shots)**
  - **Deck awareness**

QUESTIONS

BACK TO FIRST SLIDE

BACK TO TOP OF DEBRIEF